

Platycheirus urakawensis (Matsumura), a hoverfly new to Europe (Diptera: Syrphidae)

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The hoverfly *Platycheirus urakawensis* (Matsumura), previously known from the eastern Palaearctic and North America, is recorded for the first time from Europe and the western Palaearctic. The finding site, a steep roadside rich in flowering plants at 370-400 m on the hilltop Altarliden in northern Sweden, is described and depicted. The site is typical of the boreal taiga with *Picea abies* as the dominating tree species. Characters for separating females of *P. urakawensis* from *P. albimanus* (F.) are presented and illustrated in a key.

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Introduction

The Diptera family Syrphidae - hoverflies - has attracted much attention lately by Scandinavian entomologists. The Fennoscandian Syrphid fauna is rather rich in species amounting to nearly 400, about 60 of which seem to display a truly boreal, boreo-arctic or arctic distribution pattern. Species of *Platycheirus* Lepeletier & Serville make up about a fourth of this latter group.

The aphidophagous genus *Platycheirus* is one of few Syrphid genera with a pronounced boreal distribution profile in the northern hemisphere (Vockeroth 1990). Within the taiga zone it is often the dominant genus. The success of *Platycheirus* in northern latitudes can be explained, at least in part, by their dependence on aphids, a primary resource available *ad infinitum* in those areas.

Quite a number of arctic and boreal species of *Platycheirus* have a very wide distribution within the Palaearctic and Nearctic realms. Vockeroth (1990) listed 70 *Platycheirus*-species from the Nearctic, 23 of which also occur in the Palaearctic region. Nielsen (1999) and Bartsch (2001) listed 39 *Platycheirus*-species from Sweden and

Norway, 26 of which, i.e. 2/3 of the Scandinavian fauna, extend their distribution into the Nearctic region.

Tentatively 16 out of 39 Scandinavian species may be regarded as boreal, boreo-arctic or arctic (Bartsch 2001, Nielsen 1999), having their main distribution within the taiga belt and/or arctic zone (5 also occur in alpine or mountainous zones in Central Europe). Only three of these (*P. latimanus* Wahlberg, *P. melanopsis* Loew, *P. kittilaensis* D. & L.) have not been recorded from North America (Vockeroth 1990). This is a clear indication that many truly northern *Platycheirus*-species have a circumpolar distribution, and that probably some other species previously recorded from North America and/or eastern Asia will turn out as Holarctic when studied more intensely. An illustrative example to the latter assumption provides the recent, quite surprising find of *P. urakawensis* (Matsumura) in northern Sweden.

Platycheirus urakawensis in Sweden

P. urakawensis is a species so far recorded from the eastern Palaearctic and a few widespread



Fig. 1. Left: Map of Scandinavia with collecting site for *P. urakawensis* (red dot). Right: Collecting site for *P. urakawensis* on the mountain Altarliden, northern Sweden.

Vänster: Karta över Skandinavien med fyndlokalen för *P. urakawensis* inritad (röd prick). Höger: Fyndlokalen för *P. urakawensis* på Altarliden vid Ruskträsk i Lycksele lappmark.

localities in northern North America. Its center of distribution is apparently in the eastern Palaearctic (Kamchatka, Primorie, the Kurile islands, Chabarovsk, Korea, Japan) where it primarily occurs in high altitudes (Ôhara 1980, Mutin & Barkalov 1999). Ôhara (1980) recorded *P. urakawensis* abundantly from mountain regions in Japan, stating that it was the most common species of the genus. The previously westernmost record in the Palaearctic region was Nepal (Vockeroth 1990).

Swedish material of *P. urakawensis* was first identified by Hans Bartsch in 2000. One male caught in July 1999 in Swedish Lapland aroused the suspicion of the collector (MS) and it was sent to Bartsch. His identification was later confirmed by Tore R. Nielsen.

In total 7 Swedish specimens are known, 2 males and 5 females, all from a single locality in southeastern Lapland and caught between the 15th and 25th of July. The first find of a male in July 1999 was more or less accidental. In July 2001 the locality was revisited and 6 further specimens were sampled, possibly indicating that *P. urakawensis* might not be a rare species.

The mountain Altarliden, the Swedish collecting site of *P. urakawensis*, is located in northern Sweden, about 30 km north of Lycksele at the south side of river Vindelälven (fig. 1). The wide

boreal forests of northern Scandinavia constitute the westernmost part of the vast taiga region of northern Palaearctic. The lowland between the coast of the Baltic sea and the Scandinavian mountain chain, about 250 km wide, is characterized by an undulating topography mainly covered by managed coniferous forest. The terrain rises westwards towards the mountain chain, here and there interrupted by river valleys and minor hills and peaks, the latter usually reaching an altitude of 300-700 meters and covered by forests.

Altarliden rises 492 meters above sea level and dominates its immediate surroundings. All captures of *P. urakawensis* were made at 370-400 meters altitude on a slope by an open, winding roadside close to a dense tree margin. The mature, rather wet forest was dominated by spruce (*Picea abies*), with pine (*Pinus sylvestris*), birch (*Betula sp.*), aspen (*Populus tremula*) and willow (*Salix caprea*) intermixed. The first specimen of *P. urakawensis* was not noticed in the field due to its great resemblance to its congener *Platycheirus albimanus* (F.), a species occurring abundantly on the same spot. On the return two years later smaller, darker specimens of *Platycheirus* were specifically searched for by scanning flowers and flying Syrphids, or by general sweeping of the vegetation.

Specimens of *P. urakawensis* were mainly observed flying rather close to the ground. Some were seen visiting flowers such as *Ranunculus* sp., *Geranium sylvaticum* and *Rubus idaeus*, the latter growing in large, tall patches. Others were observed cruising among stalks of grass. The habit in general did not seem to diverge from *Platycheirus albimanus*.

As mentioned above *P. urakawensis* occurred in rather low numbers. It was outnumbered by its close relative *P. albimanus* which sometimes was seen in large numbers flying or resting on vegetation. Other species of *Platycheirus* occurring simultaneously were *P. parvatus* Rondani, *P. podagratus* (Zetterstedt), *P. peltatus* (Meigen) and *P. clypeatus* (Meigen).

The biology of *P. urakawensis* is not known. Vockeroth (1990) cited Japanese observations of larval predation on the aphid *Myzus persicae* (Sulzer), a common pest on various plants.

Recognizing *Platycheirus urakawensis*

As was remarked above *P. urakawensis* is very close to the common and widespread *P. albimanus* (F.) and cannot with certainty be distinguished in the field. Under the microscope, however, several distinct differences appear.

Ôhara (1980) carefully redescribed the male and female of *P. urakawensis* based on Japanese material, and provided some excellent illustrations of diagnostic characteristics of the male, including head (frontal and lateral view), antennae, fore leg, maculate pattern of abdomen and genitalia. He also illustrated the maculate pattern of the female abdomen.

Vockeroth (1990) included *P. albimanus*, *P. urakawensis*, *P. scutatus* (Meigen), *P. nigrofemoratus* Kanervo and *P. ciliatus* Bigot in the "albimanus subgroup" (2c) under the informal "albimanus group". He redescribed the male of *P. albimanus* and provided diagnostic descriptions of the other species included in the subgroup, also illustrating the fore legs.

Males of all these species are easily identified on their characteristic configuration of the fore legs (fig. 2), including tarsomeres, tibial form, pubescence and setation. Ôhara (1980) and Vockeroth (1990) give further details on male characteristics.

Ôhara (1980) and Vockeroth (1990) regarded females of *P. urakawensis* as inseparable from *P. albimanus*. In the key below the morphological characters which I have found most reliable for distinguishing females of the species are summarized. The key is based on Swedish material of *P. albimanus* (n=50) with which the five Swedish females of *P. urakawensis* were compared.

Key to females of *P. albimanus* and *P. urakawensis*

1. Femora of fore and mid-legs yellow. Larger, broader, paler coloured species. Face usually bronze or bluish, dull due to dense pollinosity. Third antennomere usually with larger, distinct orange spot ventrally. Postocular setae close to interior ocular corner usually pale. Longest scutellar bristles pale. Lower half of anterior mesopleuron (anepisternum) slightly obscured by fine reticulation. Hind tibia usually yellow on basal 1/3-1/4. Abdomen broader, spots on tergites 2-4 larger, silvery, sometimes with slight bluish tinge, pollinose spots on T3-4 large, distinctly quadrate. (fig. 3a-6a.) Length: 6.5-8 mm.
..... *P. albimanus*
- Femora of fore and mid-legs with extensive black ring covering mid 2/3's. Smaller, slender, darker species. Face blackish with slight bluish tinge, rather shining medially, densely pollinose only at sides. Ventral spot on third antennomere vague, smaller, darker. Postocular setae pale with a few black setae closely behind interior ocular corner. Longest scutellar bristles black. Lower half of anterior mesopleuron brilliant. Hind tibia black except for basal 1/10. Abdomen narrower, tergite spots smaller, on tergite 2 usually intensely blue, pollinose spots on T3-4 small, vaguely defined, interior sides more rounded. (fig. 3b-6b.) Length: 6-7 mm.
..... *P. urakawensis*

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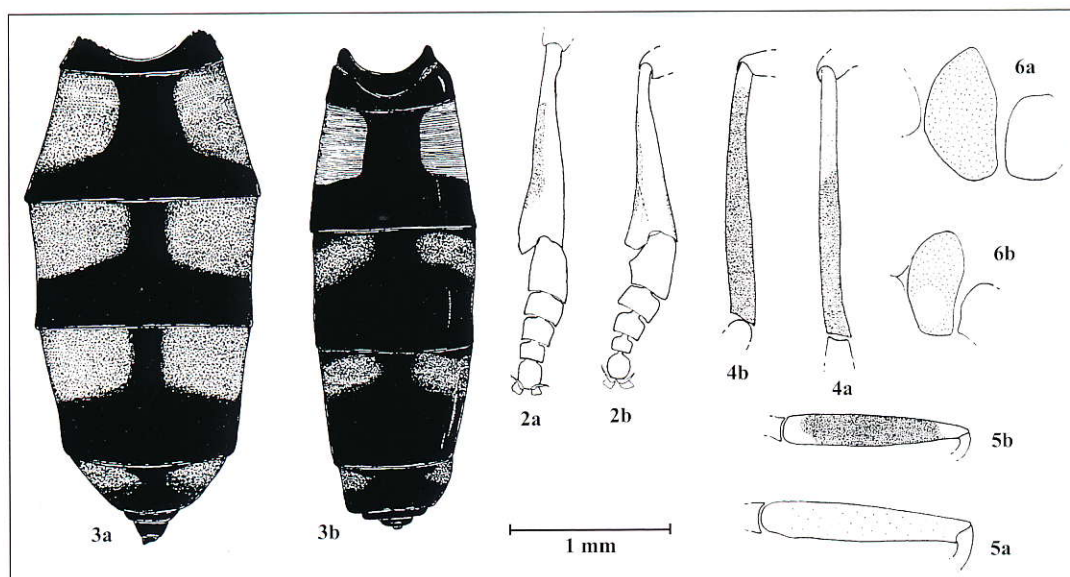


Fig. 2-6. Diagnostic characters for separation of *P. albimanus* (a) and *P. urakawensis* (b). 2. Male foreleg. 3-6. Female abdomen (3), hind tibia (4), mid femur (5), anterior mesopleuron (6).

Fig. 2-6. Diagnostiska karaktärer för bestämning av *P. albimanus* (a) och *P. urakawensis* (b). 2. Hanens framben. 3-6. Honans bakkropp (3), bakskenben (4), mellanlår (5), främre del av mesopleuron (6).

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Sammanfattning

Fynd av blomflugan *Platycheirus urakawensis* (Matsumura) från berget Altarliden norr om Lycksele i Lycksele lappmark presenteras. Arten var tidigare närmast känd från Nepal, med huvudutbredningen förlagd till Östpalearktis och Nordamerika. Sannolikt hör den till den boreala taigafaunan med många andra arter av liknande vida, stundom cirkumpolära utbredningsmönster. Altarliden är en av många likartade smärre höjder i det sydlappländska, boreala

skoglandet med dominans av gran och tall samt inslag av björk, asp och sälg. Trots avverkning i sen tid finns på berget fortfarande ganska omfattande urskogslänkande rester kvar med mycket gamla trädindivider.

Fyndlokalen utgörs av en blomrik vägsänt, fläckvis fuktad av källdrag, som gränsar mot ett bryn av mogen granskog belägen på 370-400 m höjd. Sammanlagt erhöles två hanar och fem honor, alla tagna i juli 1999 och 2001, flygande bland gräs eller snår av hallon, eller sittande på smörblommor eller midsommarblomster.

Arten står nära *P. albimanus* (F.) vars honor tidigare inte kunnat skiljas från *P. urakawensis*. Medan hanar lätt skiljes på bl.a. frambenens utseende, se Vockeroth (1990) och fig. 2, utmärkes den mörkare och spensligare honan av *P. urakawensis* främst av svartfläckiga fram- och mellanlår, mera glänsande ansikte, långa svarta skuttelborst, nästan helsvarta bakskenben, samt dovre färgad bakkropp med mindre pudelfläckar och rent blå metallfläckar (fig. 3-6).